CLAIMS:

1.   A method for merging a pair of overlapping two-dimensional (2D) images, said images being projections of a single three-dimensional (3D) scene, said method comprising:

        selecting at least four feature points in the 3D scene,

5   finding the 2D coordinate of the points in both images corresponding to the selected feature points, the 2D coordinates being found with respect to original coordinate systems in the two images,
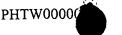
        translating the original coordinate systems of the two images in order to substantially minimize the average coordinate ranges of the 2D coordinates found,
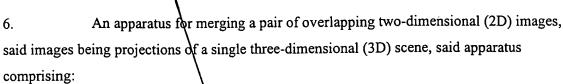
10   determining the parameters of a substantially optimal projective transformation relating the corresponding translated coordinates in the two image,

        determining the parameters of the projective transformation for application in the untranslated coordinate systems of the two images, and

        merging the two images by transforming one image according to the projective
15   transformation and combining the transformed image with the other image.

2.   The method of claim 1 wherein the step of selecting further comprises automatic selection of feature points with sufficient surrounding structure for accurate matching of the corresponding 2D coordinates in the two images.

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3.   The method of claim 1 wherein the step of translating further comprises determining the translation for each image as the average of the 2D coordinates in that image.

4.   The method of claim 1 wherein the step of determining the projective
25   translation parameters further comprises performing a singular value decomposition.

5.   The method of claim 1 wherein the step of determining the projective translation parameters further comprises performing a minimization of an error function.

6.   An apparatus for merging a pair of overlapping two-dimensional (2D) images, said images being projections of a single three-dimensional (3D) scene, said apparatus comprising:

means for obtaining a pair of 2D images,

a processor responsive to the means for obtaining images and configured to perform the method of claim 1,

a display for viewing the pair of images merged by the processor.

7.   The apparatus of claim 6 wherein the means for obtaining images further comprises a digital camera.

8.   The apparatus of claim 6 wherein the means for obtaining images further comprises an x-ray apparatus.

9.   The apparatus of claim 6 wherein the means for obtaining images further comprises a network connection across which the images are received.

10.   The apparatus of claim 6 wherein the processor further comprises means for reading a computer readable medium.

11.   An x-ray apparatus for merging a pair of overlapping two-dimensional (2D) images, said images being projections of a single three-dimensional (3D) scene, said apparatus comprising:

an x-ray source for projecting a beam of x-rays through an object to be examined,

an x-ray detector for obtaining digital x-ray images which are projections of the object,

a processor responsive to pairs of overlapping x-ray images obtained by the x-ray detector and configured to perform the method of claim 1,

a display for viewing the pair of images merged by the processor.

12.   The apparatus of claim 10 further comprising means for jointly moving the x-ray source and the x-ray detector for rotation about at least one axis or motion along at least one direction.

13.   A computer readable medium comprising encoded program instructions for causing a processor to perform the method of claim 1.